

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte UWE W. SCHULZ  
and OLIVIER JOSSERAND

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Appeal No. 2000-1346  
Application 08/730,516

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ON BRIEF

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Before COHEN, ABRAMS, and MCQUADE, Administrative Patent Judges.

MCQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Uwe W. Schulz et al. appeal from the final rejection of claims 1 through 8. Claim 9 stands objected to as depending from a rejected base claim. Claims 10 through 20, the only other claims pending in the application, stand withdrawn from consideration pursuant to 37 CFR § 1.142(b).

THE INVENTION

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The subject matter on appeal relates to "cooling or heating apparatus to be used with suspended ceiling configurations in a home, office or other commercial or industrial buildings" (specification, page 1). Representative claim 1 reads as follows:

1. Apparatus for heating or cooling a space comprising:  
a plurality of heat conducting ceiling tiles suspended above the space to be heated or cooled;  
a plurality of spiral shaped coils in thermally conductive contact with said plurality of heat conducting tiles, said spiral shaped coils each having a spiral shape allowing the coil to maintain substantial physical contact with the ceiling tile beneath the coil even when the ceiling tile beneath the coil flexes, bends or sags; and  
at least one heat exchange fluid supply line and at least one heat exchange fluid return line connected to said plurality of coils so as to define at least one path of heat exchange fluid through said plurality of spiral shaped coils in thermally conductive contact with said plurality of heat conducting tiles.

THE PRIOR ART

The items relied on by the examiner as evidence of obviousness are:

Rupp	1,847,573	Mar. 1, 1932
Raider	2,677,749	May 4,
1954		
Rapp	2,751,198	Jun. 19, 1956

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Kastovich et al. (Kastovich)	3,372,740	Mar. 12, 1968
Schmitt-Raiser et al. (Schmitt-Raiser)	5,042,570	Aug. 27, 1991

Planzer Canadian Patent Document	730,361	Mar. 22, 1966
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Kuwazawa et al.	3-175218	Jul. 30, 1991
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Japanese Patent Document<sup>1</sup>

The background discussion on page 1 of the appellants' specification concerning the "heretofore" known use of relatively thin metal tiles in suspended ceiling heating/cooling configurations (the admitted prior art)

#### THE REJECTIONS

Claims 1 through 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Canadian reference in view of Rupp.

Claims 1 through 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Canadian reference in

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<sup>1</sup> An English language translation of this reference, prepared by the United States Patent and Trademark Office, is appended hereto.

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view of Rupp, and either Schmitt-Raiser or the admitted prior art.

Claims 2 through 4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Canadian reference in view of Rupp and Kastovich.

Claims 2 through 4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Canadian reference in view of Rupp, either Schmitt-Raiser or the admitted prior art, and Kastovich.

Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the Canadian reference in view of Rupp and the Japanese reference.

Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the Canadian reference in view of Rupp, either Schmitt-Raiser or the admitted prior art, and the Japanese reference.

Claims 7 and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Canadian reference in view of Rupp and either Raider or Rapp.

Claims 7 and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Canadian reference in view of

Rupp, either Schmitt-Raiser or the admitted prior art, and either Raider or Rapp.

Attention is directed to the appellants' brief (Paper No. 11) and to the examiner's final rejection and answer (Paper Nos. 7 and 12) for the respective positions of the appellants and the examiner with regard to the merits of these rejections.

#### DISCUSSION

The Canadian reference discloses a building space having a suspended ceiling composed of a plurality of heating panels 12. Each panel includes a steel plate 20 and a length of copper tubing 26 formed into a serpentine or boustrophedonic configuration in heat-conducting contact with the upper surface of the plate. As shown in Figure 1, the heating panels are arranged in rows, and at least some the serpentine or boustrophedonic tubing lengths associated with the plates in each row are connected in series. In use, "[a] fluid heating medium, such as water, is passed through the copper tubing 26, heat being transferred from the water to the copper tubing 26 which gives up heat to the heat-exchange plate 20,

which in turn transmits heat to the atmosphere" (page 3, lines 13 through 17).

As tacitly conceded by the examiner (see page 3 in the final rejection), the suspended ceiling disclosed by the Canadian reference does not respond to the limitations in appealed claim 1 requiring "a plurality of spiral shaped coils . . . each having a spiral shape" in thermally conductive contact with the heat conducting tiles. According to the appellants' specification (see, for example, page 2), and claim 1 itself, the spiral shape allows the coils to maintain contact with the ceiling tiles even when the tiles flex, bend or sag. The examiner's reliance on Rupp to overcome this deficiency in the Canadian reference is not well taken.

Rupp discloses a platen for use in a molding press. The platen includes an embedded steam pipe or coil for heating the articles molded. In contrast to a known zigzag pattern, Rupp's steam pipe has a spiral configuration to provide a more even temperature over the whole of the platen. With reference to the drawing figures, Rupp explains that

hot steam enters at the end 12 of the coil and passes inwardly, following the direction of the

arrow 13. The hot steam therefore circulates practically the whole of the platen adjacent the periphery and then by succeeding loops of the coil, travels towards the center. By the short section of pipe 21 the steam is transferred from the inflowing coil to the coil for outflowing steam and flows reversely outwardly following the path of the arrow 19. The steam in the outflow is of a lower temperature from that of the intake, on account of the loss of temperature in heating the platen and the articles to be pressed, but on account of the outgoing steam pipe sections being spaced between the inflowing steam, a relatively equable temperature of the platen is obtained from side to side and from the center to the outer periphery. This gives a materially better uniform heating effect than where the steam follows the zigzag path of the platen, in which latter case the platen is usually hotter at one side than at the other [page 2, lines 33 through 56].

In proposing to combine the Canadian reference and Rupp to reject claim 1, the examiner concludes that "[t]o have bent the coil 26 (which is made of copper) of [the Canadian reference] into the shape of a double spiral (as taught by Rupp) would have

been obvious to obtain more uniform surface temperatures" (final rejection, page 3).

The examiner, however, has not explained, nor is it apparent, why the artisan would have found such uniform surface temperatures to be beneficial in the space heating

environment disclosed by the Canadian reference. As indicated above, the heating panels of the Canadian reference are arranged in rows and at least some of the tubing lengths associated with the plates in each row are serially connected. It follows from the self-evident heat loss principles discussed by Rupp that heating fluid flowing through the Canadian reference's serially connected tubing lengths will heat the upstream panels more than the downstream panels, resulting in a temperature differential along the reach of the serially connected panels. While providing the tubing length of each panel with a spiral shape of the sort disclosed by Rupp arguably would produce a more uniform temperature distribution over the surface of each individual panel, it would not change the temperature differential along the extent of the serially connected panels. Thus, the examiner's proposed modification of the Canadian reference in view of Rupp would not result, in and of itself, in any apparent uniform heat distribution advantage relevant to the Canadian reference's space heating objective.

In light of the foregoing and the fact that neither the Canadian reference nor Rupp contemplates the contact maintaining advantage spelled out in claim 1 as being afforded by the spirally shaped coils, we are constrained to conclude that the combination of these references advanced by the examiner stems from an impermissible hindsight reconstruction of the appellants' invention. Moreover, this fundamental flaw in the basic reference combination finds no cure in the additional references applied by the examiner.

Hence, we shall not sustain any of the standing 35 U.S.C. § 103(a) rejections of independent claim 1 and dependent claims 2 through 8.<sup>2</sup>

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<sup>2</sup> In order to provide its limitations with a proper antecedent basis, claim 6, which currently depends from claim 1, should be amended to depend from claim 5.

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SUMMARY

The decision of the examiner to reject claims 1 through 8  
is reversed.

REVERSED

IRWIN CHARLES COHEN	)	
Administrative Patent Judge	)	
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	)	
	)	APPEALS AND
NEAL E. ABRAMS	)	
Administrative Patent Judge	)	INTERFERENCES
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JOHN P. MCQUADE	)	
Administrative Patent Judge	)	

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